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Exploring wellbeing in human settlements - A spatial planning perspective

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ABSTRACT

This paper explores wellbeing as a central concept in the larger conceptual framework of human settlement planning that combines ongoing debates related to climate change, sustainability, resilience, earth jurisprudence and builds upon similar recent research. As more and more people are living in larger settlements, there is growing a curiosity as well as need to understand what wellbeing is and how it can be understood from the spatial planning perspective. Prominent contemporary global policy documents including the New Urban Agenda (NUA) advocate cities to foster people's wellbeing by incorporating it in planning practices. However, there is a dearth of research that explores wellbeing in human settlements from the spatial planning perspective. This paper presents an interdisciplinary understandings of wellbeing and proposes the wheel of wellbeing in human settlements which consists of four pillars, participation and engagement, access, identity and safety. It also discusses the linkage between wellbeing and sustainable development and argues that by focusing on the wellbeing of people, settlements can become more resilient and sustainable. It further highlights prominent spatial features of wellbeing and the increasing attention that wellbeing is getting in policy formulations. Finally it concludes that even though a universal definition of wellbeing remains arguable, understanding wellbeing in human settlements as a spectrum of attributes and aspects that depend upon their context, can assist in formulating policies that enhance the wellbeing of people and make settlements more sustainable and resilient.

1. Introduction: why wellbeing - changing narrative

This paper explores wellbeing as a central concept in the larger conceptual framework of human settlement planning that combines ongoing debates related to climate change, sustainability, resilience, earth jurisprudence and builds upon similar recent research (Hiscock et al., 2014); (Gehl, 2010); (Astell-Burt and Feng 2015); (Mouratidis, 2018); (Kent & Thompson, 2014); (Ala-Mantila, Heinonen, Junnila, & Saarsalmi, 2018).

The betterment of life driven by the desire to live a happy life with high level of wellbeing has been the quest of humanity since antiquity (Dodge, Daly, Jan, & Sanders, 2012). Currently there is a renewed curiosity across disciplines including spatial planning to understand wellbeing. Both Sustainable Development Goals (SDG) and New Urban Agenda (NUA) have asserted the significance of looking at the larger picture in human settlements (United Nations, 2015); (United Nations, 2016). The Inter-Governmental Panel on Climate Change (IPCC) specifically mentioned cities the dominant form of human settlements as "one of the four major global systems that must undergo significant changes" to save the world from catastrophic impacts of more than 1.5° Celsius rise in global temperature (IPCC, 2018); (McGrath, 2018). In addition to highlighting the importance of human settlements in fighting climate change, UN has also urged for 'happiness' to be included in development policy (United Nations, 2011).

Today more people live in the urban areas (55%) than in the rural areas (45%) and this is projected to grow to 68% by the year 2050 (UNDESA, 2018); (Division 2012). The notion of human settlements providing a collective space, protecting people from the harshness of nature as well as nurturing their overall wellbeing, draws hordes of people to urban areas every year in many parts of the world; mainly due to the employment, health and social opportunities they offer (Khan, Hassan, & Shamshad, 2011); (Babi, Xiong and Ladu 2017); (World Economic Forum, 2017). Urban areas are likely to grow continuously in number (Muggah, Sargent, Nourbaksh, & Paul, 2017) and despite the rising ill effects (such as pollution, decline of physical and mental health, loneliness, stress, indifference etc.) economic and other

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opportunities justifications for living in urban areas still outweigh the concerns (Simmel, 1950); (Moore, Gould, & Keary, 2003); (Rose & Fitzgerald, 2015); (Tonkiss, 2003); (Lederbogen et al., 2011); (Sedgley & Elmslie, 2011).

At the same time, neo liberal economy driven settlement planning (that the maximization of productivity/production is the main objective of human settlements) that greatly defined urbanization and the urban way of life in the 20th century cities, is being challenged (Harvey, 2007); (Sassen, 1999); (Castells 1979). Many authors have called the obsession with GDP growth (and the resultant spatial planning – where space is designed to maximize economic growth) to end and look beyond the *Growth Fetish*[2] (Hamilton, 2003); (Stiglitz, Sen, & Fitoussi, 2009). At the same time climate change, sustainable development and rising inequality are some of the major concerns that demand a relook at the status quo and call for a more balanced path into future.

In this perspective, this paper aims to understand the notion of wellbeing of people living in human settlements (especially in the urban areas) from the spatial planning perspective and discusses how focusing on wellbeing can make settlements more sustainable and resilient. It further explores various attributes and spatial dimensions of wellbeing. Though this paper refers more to the urban areas, it equally considers all other forms of human settlements. To understand these concepts from (the spatial planning perspective) and translate them into related vocabulary, it divides wellbeing into its constituent attributes and analyses them further. Limited availability of relevant literature is the main challenge in exploring wellbeing from the spatial planning perspective.

2. Understanding wellbeing

The word wellbeing is made from two words “well” and “being” and can be literally interpreted as “being well” or the state when things are generally fine. It is defined by various dictionaries as a state resultant of factors such as health, happiness, prosperity, comfort etc. (Cambridge University Press, 2016); (Merriam-Webster, 2016); (Oxford University Press, 2016). All these factors express (some form of) positivity in life. Researchers across scientific disciplines have been grappling with understanding and defining wellbeing. However, there is a growing consensus that due to its nature, wellbeing can be better described than defined (Dodge et al., 2012).

Historically, the notion of wellbeing stemmed from metaphysics where ancient philosophers constantly pondered over life and its purpose. The concepts of Hedonism and Eudaimonism were among the initial attempts to understand wellbeing. Hedonism relates to “the experience of positive emotional state and satisfaction of desires and pleasures” while Eudaimonism corresponds to “the presence of meaning and development of one's potentials” (Disabato, Goodman, Kashdan, Short, & Jarden, 2016); (A. Moore, 2013); (Kraut, 2018). The (overall) notion of wellbeing is argued to be a resultant of both hedonic as well as eudaimonic factors (Disabato et al., 2016).

Wellbeing relates to two different levels, subjective (individual) and collective (community). Subjective wellbeing is the sense of wellbeing of an individual (Diener & Ryan, 2009). Collective wellbeing derives from linkages that are shared by people and society(ies), such as relationship, culture, economy etc. (Lee & Kim, 2015). Initial efforts to understand wellbeing focused mostly on the subjective notions of wellbeing such as happiness and satisfaction with life however, the collective aspects of wellbeing are as well drawing attention with time (Uchida & Oishi, 2016). Many researchers started using the mean levels of subjective wellbeing as indicators of collective wellbeing (Diener, Diener, & Diener, 1995); (Inglehart, Foa, Peterson, & Welzel, 2008); (Uchida & Oishi, 2016). New research has argued that the collective wellbeing in fact has stronger impact on overall wellbeing than the subjective wellbeing (Trebeck, 2012); (Oxfam, 2013). The distinction between subjective and collective wellbeing is ambiguous and though they are often correlated, *Easterlin paradox* (i.e. after a certain level, increase in per capita income of nation doesn't necessarily translate into enhanced happiness of its citizens, implying that the increase in the attributes of collective wellbeing need not necessarily enhance subjective wellbeing perpetually) underlines the complexity of their relationship (Easterlin, 1974); (ESRC, 2018). Researchers have further argued that if factors supporting collective wellbeing (such as income equality) stagnate or decline, subjective wellbeing stagnates or falls as well, despite increase in overall collective wellbeing (Yu & Wang, 2017); (Oishi, Kesebir and Diener 2011). This paper builds on the contemporary understanding of the congruency of these notions and analyses both collective and subjective notions of wellbeing.

According to Diener and others, definitions of subjective wellbeing focus on the personal evaluation of one's life, developing capabilities, fulfilling potential and leading a socially useful life (E. Diener, 2000); (Marks & Shah, 2004). Diener and Suh state that subjective wellbeing consists of three interrelated components, namely - life satisfaction, pleasant affects and unpleasant affects (Diener & Suh, 1997). Seligman describes wellbeing as a combination of five major factors (PERMA) namely a) positive emotion, b) engagement, c) relationships, d) meaning and e) accomplishment (Seligman, 2011). This is supported by other research as well. Daily experiences in a city can significantly affect one's positive emotions, and space can have intrinsic values to enhance these emotions (Lalli, 1992). Others have underlined the role of relationships in enhancing the sense of wellbeing as networks (personal as well as social) directly affect individual's physical and mental health and wellbeing (Rath & Harter, 2010). Meaning in life can often be altruistic and it provides people with a sense that the life has a bigger purpose that goes beyond the self (Seligman, 2011). Accomplishment is the sense of achievement, mastery and competence over what we do (Seligman, 2013).

Collective wellbeing is often seen from an economic perspective and the idea of economic growth bringing ‘happiness’ to people remains popular. As stated earlier, initial attempts to measure collective wellbeing were based on calculating the mean of subjective wellbeing of a larger sample. Overtime, other factors impacting collective wellbeing such as group affiliations (Inglehart et al., 2008); (Putnam, 1995); (Diener & Seligman, 2016), social networks, culture (Oishi and Schimmack 2010) etc. were explored as well. These factors are discussed further in section 3.0.

These definitions and description of wellbeing include objective, subjective, cultural and context specific factors. However, the complexity of defining wellbeing is exacerbated by the (often) interchangeable usage of similar and popular notions such as ‘satisfaction with life’, ‘happiness, ‘good health’ and ‘quality of life’. Researchers have pointed to the minute differences between these concepts and argued these are subsets of wellbeing. Health is defined as “a state of complete physical, mental, and social well-being not merely the absence of disease” (World Health Organization 2014). The definition of quality of life by WHO covers the subjective assessment of life with respect to (w.r.t.) culture, value system and self-perception as well as the collective impact of the environment in which people live as the quality of life is “affected in a complex way by persons' physical health, psychological state, level of independence, social relationships, personal beliefs and their relationships to the salient features of their environment” (World Health Organization 1997). However, the quality of life should be understood as one of the contributing factors to wellbeing (Dodge et al., 2012). Similarly, satisfaction with life is one of the constituents of wellbeing and “focusing only on this aspect leads to the unfortunate omission of other important aspects of wellbeing” (Forgeard, Jayawickreme, Kern, & Seligman, 2011). Marks and Shah conclude that “though happiness is an essential part of it, the notion of

[2] Growth Fetish denotes the obsession of countries to grow their GDPs perpetually and treating its growth rate as an indicator of human development and wellbeing.

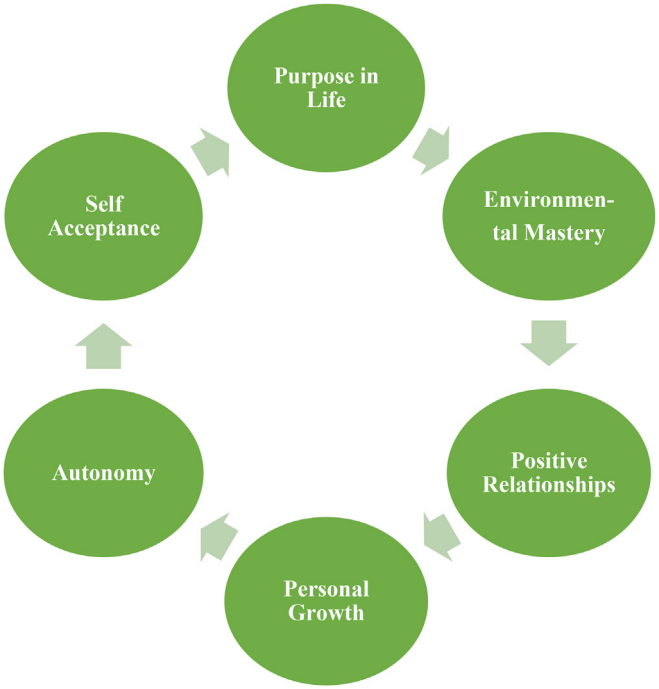

Fig. 1. Core dimensions of Subjective Wellbeing by Ryff & Singer.
Source: By authors, based on (Ryff & Singer, 2008, pp. 13–39) and (Shekhar, 2017).

wellbeing is more than happiness" (Marks & Shah, 2004).

Researchers agree that wellbeing is bigger than all its constituents. Dodge et al. conclude that "it seems that a narrow emphasis on the quality of life cannot adequately help us to define wellbeing. Indeed, it would seem that quality of life appears to be a dimension of wellbeing rather than an all-embracing definition" (Dodge et al., 2012). Ryff and Singer list six core dimensions of subjective wellbeing (Fig. 1) based on their analysis of various theoretical debates around wellbeing (Ryff & Singer, 2008, pp. 13–39).

Dodge et al. argue that "it would be appropriate for a new definition of wellbeing to center on a state of equilibrium or balance that can be affected by life events or challenges" (Dodge et al., 2012). This defines wellbeing as a range of possibilities/events consisting of various dimensions and factors that (in different combinations) determine the wellbeing of people. This understanding of wellbeing describes it as a dynamic and fluid state rather than a fixed point or a singular event in life. It is important to note that across all these definitions and descriptions, dimensions such as purpose, relationships, physical and psychological health etc. are recurrent.

3. Attributes of wellbeing

On the basis of previous sections, this section lists and elaborates aspects and attributes of wellbeing from the spatial planning perspective. These are the topics/elements/domains that are most common among various descriptions of wellbeing (section 2.0) as well as are most frequently measured by different indicators such as OECD Better Life Index (OECD, 2015), Gallup-Healthways Wellbeing Index (Healthways, 2014), Canadian Index of Wellbeing (Wellbeing, 2017), Gross National Happiness, Bhutan (Research 2016) and the Happy City's Thriving Places Index (City, 2018). These link to spatial planning through their constituting aspects despite originating from different disciplines. For example, 'Positive Emotions' is used as one of the most frequent indicators of wellbeing in its different measurements and descriptions. Factors that promote positive emotions such as engagement and participation can be addressed through spatial planning and by dividing positive emotion into measurable planning related aspects, it is linked to spatial planning. The aspects and attributes of wellbeing are presented in Table 1 and Table 2 respectively.

In Table 1, it is interesting to note that the aspects of financial safety and security (including income and wealth) and good health are included in various indicators that aim to measure wellbeing despite often not being explicitly highlighted in the academic understanding of wellbeing. Spatial experiences and interactions are included only in those research that empirically measure spatial identity and wellbeing.

These aspects, based on the similarities in their objectives, measurement and impact, are categorized into four broad headings, called the attributes of wellbeing (Table 2 & Fig. 2). These attributes of wellbeing build the foundation of wellbeing in human settlements. Each attribute consists of aspects that either strengthen them or are (themselves) strengthened by their respective attribute. Some aspects relate to more than one attributes due to their overlapping nature/impact.

The wheel of wellbeing (Fig. 2) represents the understanding of wellbeing in human settlements as developed in this paper. It is based upon its four main attributes presented in Table 2; participation and engagement, access, identity and safety. All these attributes can be further divided into measurable aspects which are directly impacted by the spatial planning policies and practices. Depending upon the context and resources, these attributes can be addressed differently. The broad and overlapping nature of these attributes can help in relating, analyzing and qualifying various planning policies to these attributes. Their overlapping nature also means that all attributes are essential as deficiency of any one of them can not only weaken the other attributes but can diminish the overall sense of wellbeing. These attributes and their

Table 1
Aspects of wellbeing - based on the literature.

Aspects of wellbeing	Mentioned in
Positive emotion	(Diener, 2000); (Seligman, 2011); (Botton, 2005); (Ryff & Singer, 2008, pp. 13–39); (Research 2016)
Accomplishment	(Seligman, 2011); (Botton, 2005); (Marks & Shah, 2004); (Ryff & Singer, 2008, pp. 13–39); (Healthways, 2014)
Satisfaction with life	(Diener & Suh, 1997); (Forgeard et al., 2011); (Dodge et al., 2012); (OECD, 2015); (Research 2016)
Relationship	(Seligman, 2011); (Rath & Harter, 2010); (Marks & Shah, 2004); (Ryff & Singer, 2008, pp. 13–39); (OECD, 2015); (Research 2016); (Wellbeing, 2017)
Belongingness	(Seligman, 2013); (Healthways, 2014); (Research 2016); (Wellbeing, 2017)
Quality of life	(World Health Organization 1997); (Dodge et al., 2012); (OECD, 2015); (Research 2016); (Wellbeing, 2017)
Work -life balance	(OECD, 2015); (Research 2016); (Wellbeing, 2017)
Meaning	(Diener E., 2000); (Seligman, 2011); (Botton, 2005); (World Health Organization 1997); (Healthways, 2014); (Research 2016)
Engagement	(Seligman, 2011); (Marks & Shah, 2004); (Wellbeing, 2017)
Participation	(Seligman, 2011); (OECD, 2015); (Healthways, 2014)
Spatial experience	(Lalli, 1992); (Wellbeing, 2017)
Good health	(World Health Organization 2014); (OECD, 2015); (Healthways, 2014); (Research 2016); (Wellbeing, 2017)
Financial safety and security	(OECD, 2015); (Healthways, 2014); (Research 2016)
Environment	(Ryff & Singer, 2008, pp. 13–39); (OECD, 2015); (Research 2016); (Wellbeing, 2017)

Source: by authors

Table 2
Attributes of wellbeing in human settlements.

Attributes of wellbeing	Related aspects
Participation and engagement	Positive emotion Accomplishment Satisfaction with life Meaning Relationship Belongingness Spatial experience
Access	Quality of life Spatial experience Relationship Work -life balance
Identity	Meaning Belongingness Relationship Satisfaction with life Spatial experience
Safety (Financial, Social and Environmental)	Accomplishment Good health Financial safety and security Work-life balance Environment

Source: by authors based on (Shekhar, 2017)

Fig. 2. The Wheel of Wellbeing in Human Settlements.
Source: by authors.

relationship with spatial planning and sustainable development is explained in the following sub-sections.

3.1. Participation and engagement

Participation and engagement are clubbed together to form the main spokes of the wheel of wellbeing in human settlements (Fig. 2). Researchers have argued that regular participation in social and community events forms meaningful links that enhance wellbeing (Putnam, 1995); (Diener & Seligman, 2016). Depending upon the size of settlements and other related factors, these avenues of participation could be political, social, religious or others (Schwab, 1992). Often settlements that offer various avenues of participation and engagement, report higher life satisfaction, better quality of life and wellbeing among their residents (Project 2015). However, researchers have also pointed toward the loneliness, exhaustion, indifference and deteriorating health that various settlements (often big cities) can induce (Simmel, 1950); (Rose & Fitzgerald, 2015); (Tonkiss, 2003). The challenge remains to overcome these shortcomings for the larger benefits that participation and engagement offer toward enhancing overall wellbeing.

Participation and engagement not only enhance wellbeing but they can also help in making settlements more sustainable and resilient. Community is often the first responder in case of any disaster and enhancing the spirit of participation and engagement can help communities to respond quickly in the immediate aftermath of a disaster and rebuild themself (McAslan, 2011); (WRI, 2008); (Cahn, Ozanne, & Ozanne, 2015). Many countries are adopting the “community resilience framework for disaster management” which instead of merely assisting communities to withstand disaster, invests more in building their (and individual) capacities to reduce vulnerability, enhance adaptation and foster resilience (Centre 2015); (EMV, 2017). This approach is centered on enhancing participation and engagement.

Communities that witness high participation and engagement from their residents are also more robust, self-reliant and can manage local issues within (EMV, 2017); (Price-Robertson & Knight, 2012). Communities across the world are experimenting with ways to improve participation in collective events which has also proved vital in making communities more resilient as the sense of belongingness motivates people to be more attentive toward the collective wellbeing of their communities (Management 2012, pp. 26–31).

3.2. Access

Access stands for equality in opportunities for people in having access to supportive and conducive physical and social infrastructure, social relationships as well as the space and resources needed to utilize them. This emulates the understanding of development as freedom (Sen, 1999). Access incorporates a vast majority of practices that can be directly influenced by spatial planning practices such as housing, health, education, recreation, transport etc. Research has found that enhancing overall access enhances wellbeing (White, 2009). Enhancement in access to resources such as medical care, community amenities, water, sanitation and communication can have significant impact on various attributes of wellbeing (IOM 2006); (Swain, 2016); (Senterfitt, Long, Shih, & Teutsch, 2013); (Graham & Nikolova, 2012); (Bisung & Elliott, 2017).

Access also includes the notion of ‘quality of life’ and ‘equality’ as it aims to minimize income, gender, racial, ethnic inequalities while enhancing the quality of these opportunities and nurturing their enablers. Researchers have argued that equality in a society enhances almost all aspects of subjective wellbeing, including enhanced access (to resources), life satisfaction and safety and vice versa. “It helps one's subjective wellbeing if others in one's nation have their needs fulfilled. For instance, it is important to a person's life evaluations if others in the society have their basic needs met, beyond an individual's fulfilment of his or her own needs. Country-level need fulfilment, especially country basic need fulfilment, had a sizeable association with life evaluations. The findings indicate that improving individual life must include improving societies” (Tay & Diener, 2011). Equality in a country supports social mobility as well (Corak, 2013). Cities with equal access to its amenities and services for all its citizens create a flourishing atmosphere (Beard, Mahendra and Westphal 2016).

Equal societies have higher level of interpersonal trust (Elgar, 2010), which in turn can make them more resilient (Pickett & Wilkinson, 2009). Equal societies are found to be more resilient to economic changes than the unequal ones as well (Lewin, Watson, & Brown, 2018). On the other hand, climate change impacts poor disproportionately more than the rich (Islam & Winkel, 2017). Social and economic inequalities can enhance the impact of climate change by enhancing exposure and vulnerability and unequal societies are more

likely to be affected by climate change than the equal ones (Dorling, 2017). Income inequality, hence the lack of access can be detrimental to society and reduces wellbeing (Wilkinson & Pickett, 2009). Enhancing access for all is crucial to fight climate change. Access promotes inclusiveness as well, which in turn can make cities more resilient (Rosenzweig et al., 2015). The IPCC advocates to address exposure and vulnerability in human settlements equally as hazards to reduce climate change risks (IPCC, 2012) as poorly managed settlements can exacerbate the impact of climate change by enhancing the exposure and vulnerability even if the hazard remains the same (Garschagen & Romero-Lankao, 2015). Designing settlements that are more equal can help in reducing exposure and vulnerability which can further assist in mitigating and adapting to climate change. Ensuring enhanced access can make settlements more resilient and robust and also enhances the wellbeing of residents (Delhey & Dragolov, 2014).

3.3. Identity

Identity and its corresponding aspects relate to the higher level needs as defined by Maslow in the "hierarchy of needs" (Maslow, 1943) and by Alain de Botton in the "ladder of needs" (Botton, 2015). Identity consists of the sense of belongingness, ownership, responsibility, association and as well as various spatial features that allow people to conceive the identity of the space they live in (Lalli, 1992). Various researchers have argued that strengthening personal and social identities can improve personal as well as collective wellbeing (Sharma & Sharma, 2010); (Sumner, Burrow and & Hill 2015); (Arkinson, Fuller, & Painter, 2012); (Garcia, Moradi, Amato, Granjard, & Cloninger, 2018). Though the tangible aspects of identity, especially those related to urban design and landscape have drawn attention, the intangible and more complex aspects of identity are relatively unexplored.

Strengthening spatial identity can also make settlements more sustainable. Identity can directly influence attitude toward environmental issues (Fielding & Hornsey, 2016), which can have direct impact on climate change resilience. Researchers have argued for a better understanding of social identity which can be used as a tool to enhance individual and collective responses to climate change (Ferguson, Mcdonald, & Branscombe, 2016); (Fresque-Baxter and Armitage 2012). Stronger relationships, satisfaction with life and meaning can enhance pro-environment behavior among community members (Kollmuss & Agyeman, 2010), which in turn can make them more sustainable (Cloutier, Larson, & Jambeck, 2013). Spatial experiences also form our identity and can significantly enhance individual and collective responses to climate change while enhancing the wellbeing at the same time. This is further discussed in section 4.0.

3.4. Safety

Safety pertains to financial safety, physical health, environment, safety of the space and society. Safety can directly impact the sense of wellbeing (Ettema & Ifeta Smajic, 2015); (Chen, Van Assche, Vansteenkiste, Soenens, & Beyers, 2015); (Pickett & Wilkinson, 2007). It is a prerequisite for the effective functioning of all other attributes. Safety encompasses the traditional notions of physical and financial safety such as crime protection and prevention and remunerative employment, however these factors alone do not guarantee high wellbeing in life (Myers and Diener 1996); (Yu & Wang, 2017); (Oishi, Kesebir and Diener 2011). The attribute of safety incorporates additional aspects such as meaningful employment, work-life balance, environmental safety, relationship with nature, good health, trust, financial wellbeing etc. that add value and support the traditional understanding of safety.

A comprehensive understanding of physical, financial and environmental safety needs to incorporate factors that not only affect the desired state but also provide means to be attain it. Therefore the meaningfulness of job in addition to being remunerative, enhances overall wellbeing (Wingerden & Joost van der Stoep, 2017). Work life balance is found to have direct influence on wellbeing and individuals with better work life balance are more likely to have higher wellbeing (Yang & Suh, 2018). Similarly, the fear of crime can negatively impact the wellbeing of residents in addition to the impact of actual crime (Pearson & Breetzke, 2014); (Alfaro-Beracoechea, Puente, da Costa, Ruvalcaba, & Páez, 2018), therefore both crime prevention as well as reducing the fear of crime are needed to enhance overall wellbeing. Multiple works including that of WHO have identified health as one of the key factors that determines wellbeing (World Health Organization 2014); (OECD, 2015). Safety also relates to environmental safety and the raging debate about anthropogenic climate change has the long term survival of humanity at its core. Climate change may not only result in immediate fall in overall wellbeing (Thomas, Sabel, Morton, Hiscock, & Depledge, 2014) and push millions into poverty (Rozenberg & Hallegatte, 2015), it threatens the very survival of humans and many other species (IPCC, 2018). This overarching understanding of safety includes all immediate prerequisites for wellbeing.

Safety and access lie at the core of a wellbeing oriented human settlement. These two pillars of wellbeing have received more attention from researchers and practitioners than the other two, however, there is a need to examine all of them to establish empirical correlations that can assist in policy making.

4. Spatial dimensions of wellbeing

The understanding of spatial features that directly and significantly impact wellbeing in a measurable way is limited. Human settlements, especially cities are gaining more attention in climate change and wellbeing debates as evident from the specific mention of cities in SDG as well as in various IPCC and other leading global reports (IPCC, 2012); (IPCC, 2018); (WBGU, 2016). This further underlines the need to empirically understand the spatial dimensions of wellbeing.

In addition to the established conceptual work such as that of Kevin Lynch and Jane Jacobs (Lynch, 1981); (Jacobs, 1961), emerging fundamental and empirical research has identified prominent spatial dimensions of wellbeing (Table 3).

The spatial dimensions impacting wellbeing discussed above cover various features of human settlements but there is no universal agreement on these and some results are contradictory as well. Though walkability is often argued to improve the wellbeing, researchers have found the car users to have high wellbeing as well. Such contradictions not only demand further research and highlight the significance of context but they also indicate the need to find a middle ground which can enhance wellbeing for the majority of people. The wheel of wellbeing presented in section 3.0 is a tool to find such middle ground. Some factors such as green space, housing and urban forms, transport network, socio-economic conditions are likely to have stronger immediate impacts on wellbeing while factors such as street network, land use, public space are likely to have more gradual impact. More research is needed to understand their relative and gradual impacts on wellbeing.

A sustainable settlement that fosters high wellbeing of its residents is more likely to be compact, have high population density (depending upon the context) and mixed land use with walkable built-up area at the human scale and have interconnected high quality green and public spaces that provide equal avenues for interaction and association to everyone. Spatial dimensions impacting wellbeing negatively tend to be related to pollution, insecurity (financial as well as safety), decay, disorder, poor building quality and lack of access. Proximity to city center and medium density neighborhoods can enhance wellbeing however car based suburban areas offer some advantages as well. These contradictions underline the need for further in-depth research. The wheel of wellbeing can assist in streamlining these research by providing a larger cohesive theoretical framework.

Table 3
Spatial dimensions of wellbeing.

Spatial dimension	Directly related aspects of wellbeing	Impact
Street layout	Relationships, Belongingness, Spatial experience, Positive emotion, Health	Different types of street layouts impact wellbeing differently, cul-de-sac have more negative impact w.r.t. other layouts; organic street layout enhances wellbeing (Venerandi, Quattrone, & Capra, 2016) Well marked streets and lanes can enhance the sense of safety; street layout can assist in relating with space and improves the sense of orientation (Kent & Thompson, 2014) Different layouts impact health and wellbeing differently, suburban areas are found to have higher mental wellbeing; traditional development encourages walkability; cluster housing enhance social interactions and association (Zuniga-Teran et al., 2017)
Public space	Relationships, Belongingness, Spatial experience, Positive emotion, Identity	It can facilitate the formation of relationships among neighbors and enhances wellbeing (Kent & Thompson, 2014) The quality of open and green space affects the sense of community; public space and commercial land use perceived to be of higher quality can enhance overall community wellbeing (Francis, Giles-Corti, Wood, & Knuiman, 2012) Three main elements of built space affecting wellbeing are a) green space and open public space b) signs of neighborhood physical disorder c) places of social interaction within walkable distance (Astell-Burt and Feng 2015)
Socio-economic conditions	Relationships, Belongingness, Spatial experience, Positive emotion, Health	Increase in income enhances wellbeing and vice versa. Wellbeing can also be impacted by the age, gender and racial variables (Kaplan, Shema, & Leite, 2008) Socio-economic conditions directly impact physical health and wellbeing; healthier alternatives are often more expensive (Kent & Thompson, 2014) Socio-economic conditions influence which spatial factors enhance the wellbeing of a specific group, depending upon the context both walkability as well as car-ownership can have positive impact on wellbeing, however neither of these is universally applicable; factors encouraging community involvement impact wellbeing positively (Ala-Mantila et al., 2018)
Green spaces	Health, Positive emotion, Relationships,	Green spaces promote mental wellbeing and reduce stress (Kent & Thompson, 2014) Park quantity (percentage of city area covered by public parks) has most significant impact on overall wellbeing, park quality and accessibility have positive but less significant impacts (Larson, Jennings, & Cloutier, 2016) High quality green spaces having features such as walking path, shade, water features, litter free, lighting, playground are associated with higher wellbeing (Astell-Burt and Feng 2015) Green areas reduce stress and enhance overall wellbeing (Venerandi et al., 2016)
Transport network	Relationships, Belongingness, Spatial experience, Health	Car oriented neighborhoods in suburban areas have higher wellbeing while pedestrianized streets offer higher wellbeing in city center (Ala-Mantila et al., 2018) Well-connected and accessible neighborhoods and pedestrian friendly areas enhance wellbeing (Venerandi et al., 2016) Road density and quality can have direct and positive correlation with overall wellbeing (Popova, 2017) Public transport policies can effect overall wellbeing. Well-connected areas enhance wellbeing however higher point to point connectivity can provide higher accessibility to personal transport users w.r.t. the public transport users (Hiscock et al., 2014)
Housing and urban form	Relationships, Belongingness, Spatial experience, Positive emotion, Health	Compact urban form fosters better relationships and higher wellbeing; high population density and proximity to city center enhance wellbeing (Mouratidis, 2018) Built form impacts the perception and feeling of space, legible forms induce safety and enhance wellbeing; design features, facades and urban design can impact association and experience of space both positively and negatively; design elements (such as stair case width, placement of bike lanes etc.) can influence user behavior as well as wellbeing (Kent & Thompson, 2014) Settlements with access to high quality open space enhance community wellbeing (Francis et al., 2012) Well insulated houses may have lower ambient air quality due to the lack of ventilation, which can decrease overall wellbeing, any change in insulation should take necessary ventilation into consideration as well (Hiscock et al., 2014)
Land use	Relationships, Belongingness, Spatial experience, Health	Compact, mixed land use areas enhance wellbeing (Mouratidis, 2018) Different land use types have different impacts on health and wellbeing, mixed land use can enhance wellbeing; population density can influence residents' behavior which can further impact overall wellbeing (Kent & Thompson, 2014) Modern land use should be based on the needs of community; incorporating traditional needs in formal land use policies can enhance overall wellbeing (Kant, Vertinsky, Zheng, Peggy, & Smith, 2013) Access to green, natural environment and local networks can be incorporated into city planning to enhance wellbeing. Urban environment can both mitigate and exacerbate health and wellbeing outcomes (Barton, 2009)

Source: by authors

5. Integration of wellbeing in spatial planning practices

The quest to understand wellbeing, though known and understood differently at different points in time, has inspired urbanists and researchers alike; from the Garden City of Ebenezer Howard who saw urban life as modern living amidst nature (Howard, 1902), to the work of Jane Jacobs who advocated for the cities to be co-created by all those who live there (Jacobs, 1961). Recent global policy frameworks such as

Sustainable Development Goals (SDG) and the New Urban Agenda (NUA) advocate similar principles for sustainable human settlements (United Nations, 2015); (United Nations, 2016) similar to what the wheel of wellbeing recommends. To enhance the wellbeing, they recommend inclusion of its fundamental attributes, such as participation, relationship, health, safety into the way settlements are planned and managed (United Nations, 2015); (United Nations, 2016). As the world is getting more and more urban, cities being our predominant habitats must create the ambience for these attributes to foster. Various researchers from across disciplines have called for a more trans-disciplinary, comprehensive approach to spatial planning (Bai, Nath, Capon, Hasan, & Dow, 2012); (Trommsdorf, 2015). Similar to Jane Jacobs' advocacy for cities to be denser, have 'human scale' and 'short blocks' that nurture relationships, promote local economy and assimilate residents by design (Jacobs, 1961), the Goal number 11 of the SDG calls for making cities "inclusive, safe, resilient and sustainable" (United Nations, 2015). NUA terms urbanization as "an engine of sustained and inclusive economic growth, social and cultural development, and environmental protection", which can lead to "transformative and sustainable development" (United Nations, 2016). This supports the understanding of wellbeing developed in this paper and presented through the wheel of wellbeing.

Various other stakeholders are also increasingly looking at human settlements in a more comprehensive manner. The German Advisory Council on Global Change (WBGU) provided detailed strategy to make cities more inclusive (WBGU, 2016); (WBGU, 2017). It recommended cities to enhance their "*Eigenart*" (identity/character) as "cities are not mere interchangeable containers but the superimposition of daily urbanity on multiple layers of history" (WBGU, 2016). This urge to address wellbeing at the policy level is inspiring research organizations and local administrations alike. The city of Santa Monica, USA launched one of the pioneer local level efforts to "define, measure and actively improve wellbeing" of its citizen in 2013 (Monica 2017). Building local wellbeing index on the basic of noted wellbeing research (Michaelson, Abdallah, Steuer, Thompson & Marks, 2009); (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004); (Stiglitz et al., 2009), it exemplifies ways to form policies for a complex scientific subject on the basis of empirical evidences. The work done by research organizations, private actors and charities such as The Happy City Project (City, 2018); Wellbeing Economy Alliance (WEAll, 2019); Happy City (City, 2019), Earth Institute (Helliwell, Layard, & Sachs, 2016) indicate to a growing trend to understand happiness at different scales including at the local level. The wheel of wellbeing can assist these stakeholders in doing so.

6. Conclusion

Understanding of wellbeing in human settlements, especially in cities must evolve as more and more people are living in urban areas while settlements across the globe are facing some very dynamic and unprecedented challenges. At the same time cities across the world are increasingly focusing on improving the quality of life and overall wellbeing of their residents. Despite differences in understanding the notion of wellbeing, there is an emerging consensus to incorporate it in the way settlements are envisaged, planned and managed as a settlement having wellbeing at its core is more likely to be resilient and sustainable. In this regard, this paper presents a framework (wheel of wellbeing) that can assist in understanding wellbeing, its attributes and spatial dimensions comprehensively. It also concludes that compact settlements having high population density (as per the context) and mixed land use with walkable built-up area at the human scale and interconnected high quality green and public spaces that provide equal avenues for interaction and association to all their residents, are more likely to foster higher wellbeing. This can assist policy makers and practitioners in seeing spatial planning in the larger perspective and can enhance overall wellbeing in human settlements and make them more resilient and sustainable.

The aspects of wellbeing, despite originating from different disciplines and perspectives have significant overlaps and synergies as this paper shows. By analyzing various aspects that the qualitative and quantitative research on wellbeing has highlighted, fundamental attributes of wellbeing can be identified. This paper concludes participation and engagement, access, identity and safety as the main pillars of wellbeing in human settlements. Various aspects and sub-aspects of the wheel of wellbeing provide suitable leverage points for its application in academic research as well as in local level planning practices. These attributes and aspects of wellbeing are trans-disciplinary and bringing them together provides a holistic view of spatial planning, urban planning, urban design, psychology, sociology and other related disciplines. The wheel of wellbeing underlines the importance of trans-disciplinary understanding of contemporary human settlements. The understanding of wellbeing presented in this paper, provides a common platform for different stakeholders to work together toward enhancing the wellbeing in human settlements and making them more resilient and sustainable.

This paper foresees some fundamental questions regarding the means and mechanisms for achieving higher level of wellbeing. There are different ways to enhance wellbeing, some of which may be contradictory and even conflicting. In addition to further research that is needed to understand these contradictions better, mechanisms to determine priorities and assist in decision making are required as well. An enhanced empirical understanding of various spatial dimensions of wellbeing is needed to select contextually more apt spatial dimensions of wellbeing such as walking versus driving cars, market driven versus public interventions to service provision etc. The wheel of wellbeing presented in this paper can provide a theoretical platform for such future research.

Conflicts of interest

Competing Interest and Conflict of Interest: Authors declare no completing interest or conflict of interest related to this paper.

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